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Read Me A Story: Reading Literacy Achievement in EU Countries

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Abstract

Reading literacy is one of the most important abilities students acquire and develop throughout their early school years. It is the basis for learning across all subjects. Reading literacy is vital to determining each individual's trajectory through life, his or her economic wellbeing, and the ability to dynamically and fully participate in broader society. The Progress in International Reading Literacy Study (PIRLS) provides participating countries with unique information on how well their students can read after four years of elementary school and places this information in an international and comparative context. In this study data from the PIRLS 2011 was used in order to find the school, class and individual background factors that explain reading literacy achievement in EU countries. Home resources and practices, reading knowledge, and students' attitudes toward reading were identified as key factors on students' reading performance. The results obtained have important policy implications as they show which factors can be addressed by policy measures to improve students' achievement.

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Keywords: Reading literacy, PIRLS, European Union.

1. Setting the scene: reading literacy and PIRLS

It is well documented in the literature the importance of *reading* for effective and fruitful participation of individuals in the social and economic life of advanced economies (Mullis at al., 2011). *Reading literacy*, together with writing, numeracy and computing are key competences to successfully meet complex demands in the current context of globalization in modern societies. These competences are acquired by students as they advance throughout the school years. Thus, investigating the determinants of *reading literacy* becomes extremely appropriate to contribute further knowledge on the ability of individuals to respond to the social and professional

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demands of the global economy and the modern *information society*, while providing valid and reliable information for policy makers. Due to the importance of this skill, in 2001, the Program for International Reading Literacy Study (PIRLS) was launched. PIRLS 2011 is the third in an international 5-yearly cycle of assessments designed to measure trends in reading literacy achievement at the fourth grade. Grade 4 was chosen because it represents an important transition point in students' development, the point at which students have already learned how to read and are now using reading to learn (Chall, 1996; Mullis et al., 2011). It is also the point at which many countries start having separate classes for different subjects (for instance, languages, mathematics, and science).

PIRLS 2011 focuses on three aspects of reading literacy:

- purposes of reading (i.e., reading for literary experience and reading to acquire and use informati
- processes of comprehension (i.e., focusing and retrieving explicitly stated information, makins aightfo d inferences, interpreting and integrating ideas and information, and examining and evaluating tent, langua and textual elements);
- behaviours and attitudes towards reading.

The complete PIRLS 2011 assessment includes 10 reading passages: 5 for the lit y exp nce p and 5 for the acquisition and use of information purpose. 13 to 16 questions were raise each ading passage. There were 135 questions in total, divided almost equally between multiple-choice uest d cons ted-response items. Young children acquire reading literacy through a variety of acti es and e ienc within different contexts. In order to gather information on community, school and hom onments, P 2011 administered five background questionnaires. These questionnaires were completed the nts being tested, their parents or caregivers, their school principals, and their teachers. In this paper factors that e in reading achievement in EU countries are identified using PIRLS.

2. Methodology

The European Union (EU) countries that partici pated in PI 201 re selected: Austria, French Belgium, Bulgaria, Croatia, Check Republic, Denmark, Finland, ance, Germany, Hungary, Ireland, Italy, Lithuania, Malta, Netherlands, Poland, Portugal, ma Slovak Republic, Slovenia, Spain and Sweden. However, England, Denmark and Germany were ex ded m analysis because in at least one of the variables of the model most of the values were m g. For e ce, in England there was no data for the variable called "Language spoken at home". Thus, th arre nalysis esents results for the remaining 20 EU countries. The total number of students for the 23 EU ntries i 087. PI S has a hierarchical structure in which students are nested in classes, and classes are nested i ool modeling (Goldstein, 2003) was used in order to investigate which explanatory factors c d be at students, class and school levels with respect to reading attainment. Three hierarchical level included he model: the first level is composed by student variables (socio-demographic and cult ci teristics of students and parents), level 2 represents the class (class composition, teachers' gender) and the last l represents the school (parental occupational status, school composition, school climate and pare eacher relati s). The model explores the impact of home and student characteristics, class variables and ool c aracteristics, as reported by school principals, on students reading achievement. Variables from the b round estionnaires were considered. The PIRLS results were analyzed for the EU as a whole taking into account effects we will report in the following section. A country-level analysis was also performed and found whe Dinis, Albergaria Almeida & Araújo, 2013).

3. Result

3.1. Descriptive statistics

In wh concerns the *student level*, the average reading achievement in the sample is approximately 529, with a standard deviation of 70.4. With respect to gender, 50.7% of the students were boys. In what concerns immigration background, 4.5% didn't speak the test language at home before they began school. For the parents' higher occupational level, the mode is the professional category (35.3% of the parents) and the lowest percentage is obtained for general laborer. Most of the students' fathers worked in full time jobs and 5.2% were not working for

pay. The percentage of mothers that had a full time job was 58.2% and 17.5% were not working for pay. The percentage of children that attended pre-school is 94.2%. In what concerns Home Resources for Learning, the percentage of students classified in the higher level was 17.8, in the medium level was 78 and for the low level only 6.2%. The distribution of the scale Students like Reading is the following: 28.7% of the students like reading, 55.3% of the students reported somewhat like reading and 16% of the students do not like reading. About forty six percent (45.5%) of students recognized most of the letters of the alphabet very well, 36.4% moderately well and 18.1% not very well or not at all. The distribution of parental book reading is 53.3% for the often category and 4.6% for never or almost never. Regarding the *class level*, most of the teachers are female and the mean percentage of students who do not speak the language of the test is 6.5. The mean percentage of students with few educational r... 4.46, with a wide range of values between classes. The *school level* variable shows that the most rep... ntative ... val for the percentage of students in the school that come from economically disadvantaged hom... 0-10%. A ... e percentage, 48.8% of schools, is located in a rural setting, the mean of parents' occupati...al lev... 2.59, ar... n most schools instruction is affected by reading resource shortages. About 74% of th... achers' e...tati... for student achievement are high or very high and the mode of parental involvement in sc... activi...s is m...

3.2. Multivariate analysis

The results show that the variables with the highest impact on student... ll reading s... t student level are related to home resources and practices and to students' pre-readi... know... e. More specifically, both the students' home resources for reading and the students like reading variables are a... as significant in explaining attainment as their knowledge of the alphabet at the start of c... ry education a... their parents' shared book reading practices. An increase between 14 to 19 points in ...ading achievement is found for these variables. Additionally, the students who spoke the same language of th... st at home ... e an increase of 18 points in reading achievement comparing with those who not speak the language ... the test. M... eover, at the class level the teacher's gender and the percentage of students not speaking the test lange... la... fluence students' reading achievement, with a female teacher associated with better perfo... increase in reading achievement in about 4 points) and a high percentage of students not speaking test langua... in a g... lass with worse performance. At the school level, the location of school, the mean of the parents' high... ed... ...level, parental involvement in school activities and school climate explain reading achie... t. Stud... eading achievement can vary between 2 and 6 points for the favored groups in these variable... igu... prese... the absolute value of the multilevel model significant coefficients producing an effect in ...ding ac... vement ... the variables at student, at class and at school level. The graph shows that a female stud...nt p... rm... ...ding than a boy (difference of 4 points). This concurs with the results of the PISA 2012 ...ey, wi... irls also outperformed boys. In both surveys, Bulgaria and Lithuania are two of the countries with ...er gender g... European Commission, 2013; OECD, 2013a). The other variable with an impact on students' ...era... ...ding score... not speaking the language of the test at home. Students who do not speak the test langu...ge score w... than those who speak the test language with an increase of 18 points in reading achievement for ...last group. In ... 2009 the main domain was reading literacy, and the same result was found: students with ... immi...ant backgro...nd who speak a different language at home tend to show lower levels of performanc... en a... their socio-economic background is considered. However, in some countries, both in PISA 2009 and in P... 011, stu...ts from an immigrant background perform just as well as their non-immigrant peers (OEC... 11). ... esult... how that the employment situation of the parents and parents' occupational level also ex... n re... g achi... ent favoring children of employed parents in a full time job and those with parents that ...e high... cupational status. As in PISA 2009, a student's socio-demographic and cultural background is related to ... ... formance in most of the participating countries (OECD, 2011).

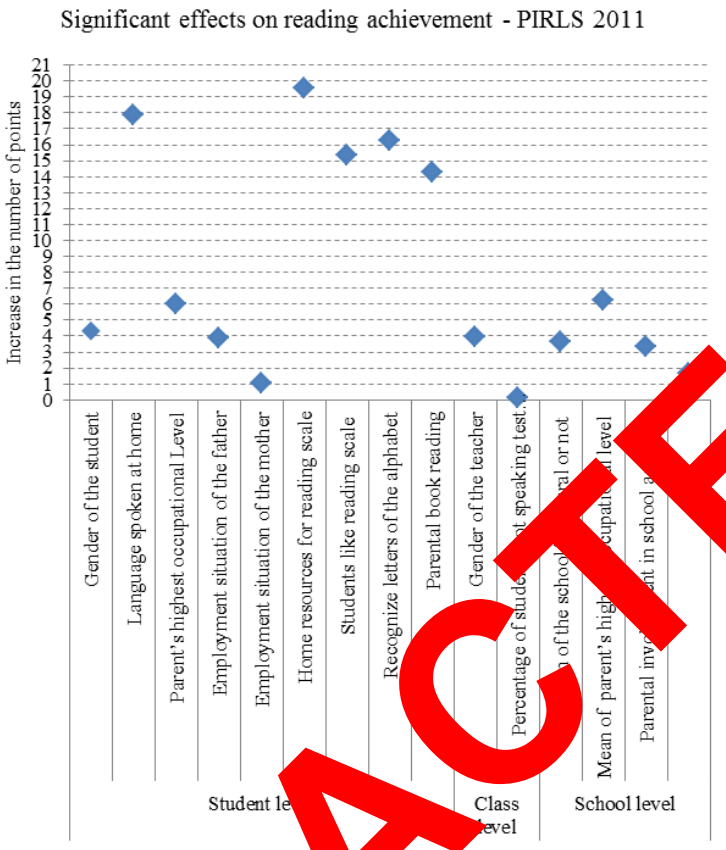

Fig. 1. Absolute value of the coefficients sta nificant e model at students, class and school level that affect students' reading ach ment (20 countries as a whole)

The Index Students Like Rea e influence, an increase of about 15 points, on students' achievement. Students wit ore reso s for learning also exhibit a 20 points increase in reading scores. Clearly, students that knew mos he letters o alphabet before they began school and students whose parents shared book reading perfor ette crease of 1 and 14 points respectively). At the class level, two variables that are statistically signif nt were fo If a teacher is female the students have a better reading score than if they have a male as a tea (difference in ding achievement of 4 points). Classes with a high percentage of students speaking th st lang ge have higher achievement, but not by much. Finally, considering the school level, results indicate th n r schools influence positively reading achievement, with an increase of 4 points. The higher the parents' occu al level e higher the students' reading scores (about 6 points). Moreover, a higher parental inv t in s l a ities is related to an increase of three points in students' reading scores. A better school mate r lt in a h reading score by about two points.

l arks

Da om the Progress in International Reading Literacy Study (PIRLS) 2011 shows that *pre-reading knowleage*; *students' attitudes toward reading*, and *home resources and practices* have a significant influence on students' reading performance. A multilevel model was developed considering school, class and individual fourth grade students' background characteristics and their effects on reading literacy achievement. The analysis was carried out at the EU level. The results are in line with the previous analysis performed for PIRLS 2006 (Araújo &

Costa, 2012). This research can be a useful tool to assess common European policies. In this respect, results suggest that policy interventions should definitely focus on education and societal changes such as those promoting the awareness of the importance of reading in schools and in society at large (e.g. literacy/reading national plans in Portugal and Poland), or those focused specifically on an early start of learning to read (e.g. Germany, United Kingdom and Lithuania). Equally important are the findings that recommend that children should know the alphabet before starting compulsory education. Thus, introducing curriculum goals and effective instructions to address an early knowledge of the alphabet should also be implemented. More generally, equity measures should be implemented by national governments to promote social and economic diversity in schools in order to reduce the school compositional effects identified in this study. In this regard, school aid to buy books may b[illegible]rategy to reduce some specific effects of poverty and, subsequently, to increase equity. As highlighted [illegible]earlier r[illegible]s of PISA, countries that have improved their reading performance have reduced the impact of stud[illegible]' socio-eco[illegible]ic status on such a performance (OECD, 2013b). In summary, this research quantitatively r[illegible]aforce[illegible]nce mor[illegible]he need to pay particular attention to education as a key driver for future development and [illegible]wth.

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